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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,511	12/14/2001	Robert J. Lauf	LAUF1100	5558

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EXAMINER

WEBER, JON P

ART UNIT

PAPER NUMBER

1651

DATE MAILED: 02/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/017,511

Applicant(s)

LAUF, ROBERT J.

Examiner

Jon P Weber, Ph.D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 33-62 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 02/19/02 6) ☐ Other: \_\_\_\_\_

***Status of the Claims***

The response with amendments filed 24 November 2004 has been received and entered. Claims 33-62 have now been presented for examination.

***Election/Restrictions***

Applicant's election with traverse of Group II, claims 33-62 in Paper filed 24 November 2003 is acknowledged. The traversal is on the ground(s) that there is no burden. This is not found persuasive because burden was established by separate classification. Further the traversal is moot in view of the cancellation of the non-elected claims.

The requirement is still deemed proper and is therefore made FINAL.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 62 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 62 is an improper Markush Group. The use of alternative language "and/or" is confusing in a closed list. Further, it is not clear how healing, scar formation or inflammatory responses can be monitored in the container. While it reasonably expected that cellular processes that occur in cell culture could be monitored, the processes of healing, scar formation and inflammatory responses take place in tissue and/or in intact organisms.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 33-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodson (US 2002/0092773) and Dissing et al. (US 6,561,968) in view of Bentsen et al. (US 6,451,191), Havens et al. (US 6,306,348), Heller et al. (US 5,632,957) and Gordon et al. (US 2001/0036641).

Goodson (US 2002/0092773) disclose growing cells in a device containing electrodes that are insulated from the cells, i.e, lack ohmic contact, and may be provided in arrays or other configurations [0026] so that the biological functions of the cell including ion migration can be effected by the electric field. A wide range of culturable cells may be used [0039]-[0043]. Waveforms may be varied as needed and are determined by the particular reactor, biological source cells, and liquid medium employed. A suitable waveform is identified by the use of waveform generating software with optimization of parameters [0048]-[0050], especially [0050]. In example 1, enhanced growth of *Saccharomyces cerevisiae* was obtained. Goodson (US 2002/0092773) lack an array of independently addressable electrodes or one transparent surface for visualization.

Dissing et al. (US 6,561,968) disclose that it is known in the art to use electromagnetic field stimulation of cells in a wide range of cell culturing and tissue treatments (column 1, line 27 to column 3, line 22). Dissing et al. (US 6,561,968) disclose that their device comprises a plurality of magnetic coils not in ohmic contact to induce electric fields in the tissue to be treated

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with a series of pulses adapted to generate the desired field (an optimization procedure) (column 34, lines 49-65). Each coil is adapted to generate different and balanced fields (column 5, lines 9-39). Dissing et al. (US 6,561,968) lack capacitive coupling or one transparent surface for visualization.

Bentsen et al. (US 6,451,191) disclose arrays of independently addressable electrodes for performing molecular biological processes. Various substrates may be used as well as permeation layers and other optical and fluorescent probes.

Havens et al. (US 6,306,348) disclose arrays of independently addressable electrodes for performing molecular biological processes. The electrodes are dielectrically insulated from the substrate (column 7, line 63 to column 8, line 11). Fluorescent detection at the surface may be used (air is transparent).

Heller et al. (US 5,632,957) disclose arrays of independently addressable electrodes for performing molecular biological processes. In a preferred embodiment a fluorescent microscope monitors the processes (implies a transparent surface) (column 6, lines 28-35).

Gordon et al. (US 2001/0036641) disclose arrays of independently addressable electrodes for performing chemical and molecular biological processes. Detection may be by luminescent or fluorescent methods (implies a transparent surface) [0068]. The electrodes may be insulated from the medium and mobility of materials effected by electrostatic field (capacitive coupling) [0095].

A person of ordinary skill in the art at the time the invention was made would have been motivated to use the arrays of independently addressable electrodes of Bentsen et al. (US 6,451,191), Havens et al. (US 6,306,348), Heller et al. (US 5,632,957) and Gordon et al. (US

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2001/0036641) in the optimizing method of Goodson (US 2002/0092773) and Dissing et al. (US 6,561,968) because Dissing et al. (US 6,561,968) uses an array of independent coils and all the references are directed to modulating biological/chemical effects. The use of at least one transparent surface is reasonably suggested by the need to monitor the process with luminescence or fluorescence. Coupling without ohmic contact by induction or capacitance are not only well known in the art and shown in at least one of Bentsen et al. (US 6,451,191), Havens et al. (US 6,306,348), Heller et al. (US 5,632,957) and Gordon et al. (US 2001/0036641).

Hence, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to determine optimum electric fields on biological cells with a plurality of independently addressable electrodes.

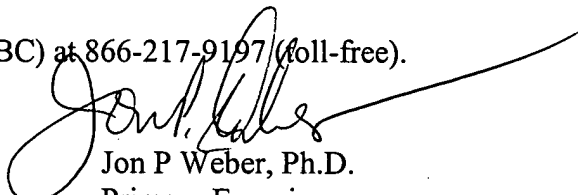
No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon P Weber, Ph.D. whose telephone number is 571-272-0925. The examiner can normally be reached on daily, off 1st Fri, 9/5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jon P. Weber, Ph.D.  
Primary Examiner  
Art Unit 1651

JPW  
5 February 2004